Preassessment Screen Determination for the Metal Bank Superfund Site

Issued by:

Pennsylvania Department of Environmental Protection;
Pennsylvania Department of Conservation and Natural Resources;
Pennsylvania Fish and Boat Commission;
National Oceanic and Atmospheric Administration (NOAA) of the United States Department of Commerce, and;
The United States Fish and Wildlife Service (USFWS) of the United States Department of the Interior

In their Capacity as the Trustees of Natural Resources at the Metal Bank Superfund Site

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1.0 INTRODUCTION

Pursuant to the authority of section 107(f) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. section 9607(f), and other applicable Federal and state laws, designated Federal and state authorities may act on behalf of the public as natural resource trustees to pursue claims for natural resource damages for injury to, destruction of, or loss of natural resources resulting from the release of hazardous substances to the environment. Claims may be pursued against parties that have been identified as responsible for releasing hazardous substances to the environment. Under CERCLA, sums recovered by trustees as damages shall be used only to restore, replace, or acquire the equivalent of such natural resources.

The first step in developing a natural resource damages claim is the preparation of a preassessment screen. The purpose of a preassessment screen is to provide a review of readily available information on hazardous substance releases and the potential impacts of those releases on natural resources to permit a determination as to whether or not a natural resource damage assessment is warranted. The review should ensure that there is a reasonable probability of making a successful claim against parties responsible for releasing hazardous substances to the environment.

This preassessment screen addresses potential claims for natural resource damages for injury to, destruction of, or loss of natural resources resulting from the release of hazardous substances at, to, or from the Metal Bank Superfund Site (Site). It was prepared in accordance with the preassessment screen provisions of the Federal regulations for Natural Resource Damage Assessments under CERCLA, 43 CFR Part 11, Subpart B, sections 11.23 through 11.25 (USDOI 1994). The natural resource trustees for the Site who have participated in the preparation of this preassessment screen include the Acting Secretary of the Pennsylvania Department of Environmental Protection (PADEP), the Secretary of the Pennsylvania Department of Conservation and Natural Resources (PADCNR), the Executive Director of the Pennsylvania Fish and Boat Commission (PFBC), the Secretary of the United States Department of Commerce, acting through the National Oceanic and Atmospheric Administration (NOAA), and the Secretary of the United States Department of the Interior (DOI), acting through the Regional Director, Fish and Wildlife Service, Region 5 (FWS) (collectively the "Trustees").

A review of readily available information documents the release of various hazardous substances, including Polychlorinated Biphenyl (PCB) contaminated oil that has been detected in the surface and subsurface soils onsite and in Delaware River sediment. There is also the presence of oil on the surface of the groundwater, in subsurface soils, and mudflat sediments. The PCB-contaminated oil has moved into the Delaware River as a result of groundwater and tidal wave movements underneath and near the Site. PCB-contaminated sediments have been detected along the shoreline immediately adjacent to the property line The documented effects of these releases on natural resources for which Federal and state agencies may assert trusteeship under section

107(f) of CERCLA, ensures that there is a reasonable probability of making a successful claim against an identified potentially responsible party for natural resource damages. Specifically, the Trustees have determined that:

(1) A release of a hazardous substance has occurred;
(2) Natural resources for which the trustees may assert trusteeship under CERCLA have been or are likely to have been adversely affected by the release;
(3) The quantity and concentration of the released hazardous substance is sufficient to potentially cause injury to natural resources;
(4) Data sufficient to pursue an assessment are readily available or likely to be obtained at a reasonable cost; and,
(5) Response actions if any, carried out or planned do not or will not sufficiently remedy the injury to natural resources without further action.

1.1 Description of the Affected Environment

The Site occupies approximately ten acres along the Delaware River and is located in Philadelphia County, Pennsylvania. The Site is located at the corner of Cottman Avenue and Milnor Street in an industrial area abutting the west bank of the Delaware River (tidal at this location) in northeastern Philadelphia. The Site is bordered by Cottman Avenue and a mudflat on the west, Milnor Street on the north, Revolution Recovery (a waste recycling company) and Morris Iron and Steel Company (a metal salvage yard) on the east, and the Delaware River on the south.

The Site is elevated approximately 15 feet above the River. The western edge of the Site, where it meets the mudflat, consists of a steep, vegetated bank that generally remains above water at all times, with a break in slope at the approximate high-water line. This break in slope marks the transition to a gentler, beach-like slope, which gradually flattens and becomes the mudflat surface. Where the south edge of the Site meets the River, the Site's bank continues downward past the low water mark without a break in slope. Currently, the Site's bank and the slope are stabilized with stone and brick riprap and the remedy stabilized part of the bank with a bulkhead. The slope and mudflat surfaces are inundated during high tide, but are partially or fully exposed at low tide.

The inactive Site, with locked buildings and a 6-foot high fence that restricts access, consists of two areas: the scrap metal recovery area, located on the southern portion of the property and referred to as "the field", and the building area, located on the northern portion of the property. The scrap metal recovery area is approximately 7 acres in size and consists mostly of artificial fill placed over river alluvium. Most of the former scrap metal recovery area has been graded and seeded. The building area consisted of six vacant brick and steel buildings on approximately 2.5 acres of land. The buildings have been constructed around a central area (referred to as "the courtyard") that provided rail car and truck access to buildings 2 and 7. These two buildings were allegedly used for electrical transformer recycling activities.

2.0 INFORMATION ON THE SITE AND ON THE RELEASE OF HAZARDOUS SUBSTANCES

As described below, the Trustees have obtained and reviewed readily available information concerning releases of PCB-contaminated oil to the soil, sediment, and water resources of the Metal Bank Superfund site.

2.1 Time, Quantity, Duration and Frequency of Releases

The Site was owned from 1962 to 1980 by Metal Bank of America, Inc. From 1968 to 1972, Metal Bank of America, Inc. drained oil from used transformers to reclaim copper parts. Metal Bank's recycling operations lead to oil releases in various locations on the property. The investigative history of the site began in 1972, when reports of oil seeping from the banks of the Delaware River at the Metal Bank site prompted the United States Coast Guard (USCG) to conduct a series of visual inspections of the Metal Bank site and the Delaware River bank. Throughout the course of the investigations, the USCG concluded that Metal Bank was the source of the oil seeps. Furthermore, the USCG determined that the source of the oil on the Metal Bank site was a leaking oil containment system associated with the electrical transformer recycling activities. As a result of these inspections, the Metal Bank of America, Inc. performed various remedial actions at the site from 1972 to mid-1973, following the recommendations of the USCG. In addition, Metal Bank of America, Inc. ceased all electrical transformer reclamation operations at the site in 1973. According to Metal Bank, upon completion of the remedial measures in 1973, the USCG took samples of soil from the site. While analysis of these samples indicated the presence of oil, analysis using state-of-the-art technology of the time did not detect PCBs in the samples.

During the period from September to November 1977, representatives of the USCG as well as USEPA, Pennsylvania Department of Environmental Resources (PADER), the US Army Corps of Engineers, the City of Philadelphia, the Fish and Wildlife Service, the National Oceanic and Atmospheric Administration (NOAA), the Delaware River Basin Commission (DRBC), and others inspected the site pursuant to the Coast Guard's authority under Section 311 of the Clean Water Act. These inspections included collection and analysis of soil boring samples, mud flat samples, and oil samples from the Delaware River. Using updated technology, these samples and the USCG's 1973 samples were reanalyzed for PCBs, which were identified in several samples. As a result of this extended site inspection, an initial work scope was prepared with preliminary conclusions and recommendations. In an effort to document the nature and extent of PCB contamination of the site and to identify and evaluate available remedial alternatives, the USCG and USEPA requested that Roy F. Weston, Inc. complete two studies: Hydro-geologic Evaluation of a Subsurface Spill at The Metal Bank of America, Inc. Disposal Site (October 12, 1978); and Evaluation of Alternatives for Control of PCB Contamination at the Metal Bank of America, Inc. site (March 1980). A third report was prepared by Energy and Environmental Analysis, Inc., at

the request of Metal Bank, entitled Evaluation of The Metal Bank of America, Inc. Cottman Avenue Site (May 1979) (Earth Tech 1994).

The USEPA conducted soil sampling at St. Vincent's School (a neighboring property) on April 1, 1989, and sampling of on-site monitoring wells in March and August of 1989. USEPA determined that the soil samples did not reveal a health risk problem. The monitoring well samples showed that a floating layer of oil was still present in some portions of the Site. In early 1991, the US EPA and the PRP Group reached agreement on a scope of work for an RI/FS to be completed by the PRP Group. USEPA and members of the Group entered into an Administrative Order by Consent obligating the Group to perform the RI/FS. This report summarizes the work completed in fulfillment of the RI portion of that agreement and its subsequent modifications. The USEPA placed the Site on the National Priorities List in September 1983. In examining the Site, the USEPA has determined that the primary contributors of PCBs to the Metal Bank landscape originated from non-point source disseminations in subsurface soils at the site. In turn, allowing residual contaminants in soil to migrate to other media (i.e., groundwater, surface water, and sediments) (Earth Tech 1994).

2.2 Hazardous Substance Released

Releases of waste oil, solvents, petroleum products, and metals from the Site have resulted in contamination of soil, groundwater, and sediments at and adjacent to the Site. A Final Remedial Investigation Report, dated October 1994, indicates that hazardous substance contamination has been detected at the Site, including the 3-acre mudflat and adjacent Delaware River sediments. PCBs have been identified as primary contaminants of concern (COCs) because of their presence at elevated concentrations in groundwater; non-aqueous phase layer (NAPL), and sediment.

Other contaminants were screened for consideration in risk assessment using chronic ambient water quality criteria (AWQC) for surface water and Effects-Range Low (ER-L) values determined by Long and MacDonald (1992) for sediment. Using these screening processes, polycyclic aromatic hydrocarbons (PAHs), phthalates, DDT (including its metabolites DDE and DDD), and cadmium have also been identified as COCs (FWS 2007).

However, PCBs have been identified as the primary contaminant of concern and remedial efforts have been focused on addressing PCB contamination. These substances have impacted the sediment, soil, surface water, and groundwater and pose a risk to aquatic resources within and adjacent to the Site. All of the above organics and inorganics are listed as hazardous substances in Table 302.4, List of Hazardous Substances and Reportable Quantities under CERCLA (40 CFR Part 302.4(a)), and as toxic pollutants pursuant to 40 CFR Part 401.15, as amended.

2.3 History, Current/Past Use and Relevant Operations at the Sites Identified as Sources of Releases

From 1950 to the mid-1960s the southern portion of the Site was created by filling in the

Delaware River. Although the source of the fill material is unknown, fill material commonly used at the time consisted of demolition debris, debris from construction sites, and rubble from other urban sources (EPA 1997, Earth Tech 1994). This portion of the Site consists of fill to a depth of approximately 15 feet (EPA 1997). Starting in 1962, the Site was used for scrap metal recycling and storage. From 1968 or 1969 to 1973, electrical transformers, many of which contained PCB-bearing oil, were salvaged at the Site. Prior to salvage, PCB-bearing oil was drained from electrical transformers and stored in an underground storage tank located in the southern portion of the Site. Spills of PCB-bearing oil during the salvage process and leaks from the underground storage tank resulted in the contamination of soil and groundwater at the Site. From 1973 to 1985, scrap metal storage continued at the Site, but no transformer salvage operations were conducted (CDM 2000, EPA 1997, Earth Tech 1994).

2.4 Potentially Responsible Parties

L. Goldstein's Sons, Inc. ("Goldstein's") purchased the Site from H.K. Porter in October of 1962. In the mid-1960's, Goldstein's changed its name to The Metal Bank of America, Inc. On December 4, 1968, Metal Bank of America, Inc. entered into an agreement to sell its assets to The Union Corporation.

Union Corporation incorporated as MBA, Inc. on December 9, 1968, and assigned its rights under the asset purchase agreement to MBA, Inc. The Metal Bank of America, Inc. liquidated in March of 1969, and its property, including the Site, was distributed to its shareholders, Irvin G. Schorsch, Jr. and John B. Schorsch. After the liquidation of the "Old" Metal Bank of America, Inc.", MBA, Inc. officially adopted that name ("Metal Bank") on December 7, 1971.

Union Corporation leased the Site from the Schorschs for its subsidiary, the "New" Metal Bank, until 1980. In 1980, the Schorschs sold the Site and the New State Road property to the Philadelphia Authority for Industrial Development ("PAID"), and the Schorschs took back the mortgage. PAID and Metal Bank entered into a twenty year Installment Sale Agreement whereby Metal Bank purchased both the Site and the New State Road property. PAID assigned its rights to payment under this Agreement to the Schorschs.

Metal Bank changed its name to U.C.O.-M.B.A. Corporation in June 1985. Although PAID continues to hold the title to the Site properties, Metal Bank has full possession of the premises and is the equitable owner of the Site under the Installment Sale Agreement.

On May 29, 1991, USEPA signed an Administrative Order of Consent with ten utility companies that sent used transformers or arranged for used transformers to the Site for disposal and/or treatment. These companies became the nucleus of the Cottman Avenue PRP Group (the "Utility Group"), which was actively involved in litigation related to the selection and implementation of remedial actions for the site.

On May 2, 2003, Union Corporation and U.C.O.-Metal Bank filed a consolidated bankruptcy under Chapter 11 of the United States Code, 11 U.S.C. § 101 et seq. With the approval of the

bankruptcy court, they agreed to a settlement which established, among other things, the Union Trust, a mechanism for managing the Metal Bank Site property and three other properties, as a mechanism to provide substantial funding for future remedial actions at the Site.

Therefore, the Trustees assert that the following individuals and entities are liable for natural resources damages at or from the Metal Bank Site:

Irvin G. Schorsch, Jr. and John B. Schorsch are liable as past owners of the site.

The Four Sites Settlement Trust may be liable as the current owners of the Metal Bank Site, subject to any limitations to liability that may have resulted from the bankruptcy process.

The following individuals and entities are liable as arrangers who by contract, agreement, or otherwise arranged for the disposal or treatment, or arranged with a transporter for transport for disposal or treatment, hazardous substances to the Metal Bank Site.

The following 11 entities; Consolidated Edison Company of New York, Public Service Electric and Gas Company, Baltimore Gas and Electric Company, Jersey Central Power & Light Company, Long Island Lighting Company d/b/a Lipa, Metropolitan Edison Company, Orange and Rockland Utilities, PECO Energy Company, Potomac Electric Power Company, PP&L Electric Utilities Corporation, and Virginia Electric and Power Company are potentially responsible parties under CERCLA.; are liable as arrangers, are collectively known as the Cottman Avenue PRP Group or the Utility PRP Group, and entered into a settlement with EPA to resolve their potential liability for remedial actions at the Site.

Cabot Corporation, Delmarva Power and Light, General Electric, and Gould Inc., are also liable as arrangers and entered into de minimis settlements with EPA to resolve their potential liability for remedial actions at the Site.

The Trustees acknowledge that there may be other sources of hazardous substance releases at or from the Site. These other potential sources of hazardous substance releases may be addressed in future investigations conducted by the Trustees, and other potentially responsible parties may be identified.

2.5 Regulatory History and Actions

The following information was summarized from USEPA documents, the Remedial Investigation (RI) Reports and Preliminary Close-Out Report.

Metal Bank, Operable Unit 1 – Operable Unit 1 includes two areas: the southern area which consists of approximately six acres of open area that was used for scrap metal recovery; and the northern area which consists of one vacant steel building, concrete footings for six buildings, a courtyard, and a parking area. In 1972, the USCG investigated reports of oil in the Delaware River and concluded that the Site was the source. During the investigations, oil and soil samples

were collected by the USCG for subsequent laboratory analysis. At the time, laboratory analysis did not detect any PCBs. However, in 1977, the USEPA retested the samples using improved laboratory procedures and confirmed the presence of PCBs.

In 1980, the USEPA filed suit in the District Court for the Eastern District of Pennsylvania for injunctive relief and costs against Metal Bank. During the litigation, Metal Bank's consultant designed a groundwater recovery and treatment system. In 1983, the USEPA settled the suit with Metal Bank under a stipulation that required Metal Bank to install and operate a groundwater recovery and treatment system until all recoverable oil was removed from the property. In March of 1989 the USEPA collected samples from monitoring wells on the property which showed the continued existence of PCB-contaminated oil floating on the uppermost aquifer. In August, the USEPA measured groundwater elevations in each of the monitoring wells on the Site to determine the thickness of the remaining oil layer. An oil layer of at least three inches was measured in some portions of the property.

In 1994, a Remedial Investigation and Feasibility Study (RI/FS) was conducted. Samples were collected from 1994 to 2002; in 2002 the Potentially Responsible Party (PRP) submitted a Final Design Report for remediation of the Site. Subsequent to the Final Design Report, additional samples were collected. Analysis of the new data and further review of the remedial options resulted in a revised Remedial Design that was approved by the USEPA in February of 2008. On July 7, 2008, remedial actions began at the Site and continued through April of 2010 (USEPA 2010). Remedial actions included, but were not limited to, the selected excavation and backfilling of soil, the installation of a soil cap on the entire southern portion of the Site, and the selected excavation and capping of approximately 4.6 acres of sediments in the Delaware River.

2.6 Damages Excluded from Liability under CERCLA or CWA

The regulations at 43 CFR Part 11.24 provide that the Trustees must determine whether the damages being considered are barred by specific defenses or exclusions from liability under CERCLA or the Clean Water Act (CWA). The Trustees have made such determinations and believe that such defenses or exclusions from liability are not dispositive, and are without merit. These required determinations are as follows:

> The Trustees must determine whether the damages: (i) Resulting from the discharge or release were specifically identified as an irreversible and irretrievable commitment of natural resources in an environmental impact statement or other comparable environmental analysis, that the decision to grant the permit or license authorizes such commitment of natural resources, and that the facility or project was otherwise operating within the terms of its permit or license, so long as, in the case of damages to an Indian tribe occurring pursuant to a Federal permit or license, the issuance of that permit or license was not inconsistent with the fiduciary duty of the United States with respect to such Indian tribe; or (ii) And the release of a hazardous substance from which the damages have resulted have not occurred wholly before the enactment of CERCLA; or (iii) Resulted from the application of a pesticide product registered under the Federal

Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. section 135-135k; or (iv) Resulted from any other federally permitted release, as defined in section 101 (10) of CERCLA; or (v) Resulting from the release or threatened release of recycled oil from a service station dealer described in section 107(a)(3) or (4) of CERCLA if such recycled oil is not mixed with any other hazardous substance and is stored, treated, transported or otherwise managed in compliance with regulations or standards promulgated pursuant to section 3014 of the Solid Waste Disposal Act and other applicable authorities.
The Trustees must also determine whether the discharge meets one or more of the exclusions provided in section 311(a)(2) or (b)(3) of the CWA.

The Trustees have determined that the potential injuries referred to herein do not meet one or more of the above criteria, nor are they subject to the exceptions to liability provided in sections 107(f), (i), and (j) and 114(c) of CERCLA, and section 311 (a)(2) or (b)(3) of the CWA. Therefore, the continuation of an assessment is not precluded.

3.0 PRELIMINARY IDENTIFICATION OF RESOURCES POTENTIALLY AT RISK

3.1 Preliminary Identification of Pathways

The most probable pathways for injury at and near the Metal Bank site occurs through direct contact with sediments, surface water, and ingestion of food contaminated with PCBs (FWS 2007). The physical and chemical properties of PCBs allow them to be taken up by biota and bio-accumulated through the food web. Contamination on site poses a food-web risk to migratory birds and other wildlife that are attracted to habitats present along the Delaware River including those found within the Site. Ingestion is expected to be the primary pathway for PCB injury to migratory birds and other wildlife at this site. Different species of migratory birds will have different pathways of exposure, depending on their feeding habitats, through ingestion of contaminated soils, sediments and/or prey items. Data showing PCBs in biological resources (e.g., fish) within the assessment area provide additional evidence of the contaminant pathway (INDUSTRIAL 2012). Routes of exposure for PCBs that were identified for aquatic organisms in the Delaware River next to the Site include direct contact with NAPL, contaminated sediments and surface water, and ingestion of contaminated prey species with subsequent transfer through the food web.

3.1.1 Surface water pathways

Surface waters are exposed to PCBs discharged directly to the Delaware River or transmitted through the movement of contaminated soil particles and organic matter by surface water or groundwater, and through the remobilization and release of contaminants from sediment (e.g. natural scouring, pore water exchange, or bioturbation). Surface waters exposed to Site-related PCBs include, but may not be limited to, the Delaware River in the mud flat and river areas (INDUSTRIAL 2012).

3.1.2 Groundwater pathways

Groundwater resources are an important source of potable water, and provide essential ecological functions such as surface water recharge. Groundwater resources in the assessment area have been exposed to Site-related PCBs via infiltration through soil in the riparian portion of the Site (INDUSTRIAL 2012). Groundwater seeps would be expected to occur in the periphery of the site, i.e., in the steep banks along the Delaware, especially during periods of heavy and lengthy precipitation events (USEPA 1994).

3.1.3 Food chain pathways (bioaccumulation)

Fish and other wildlife (e.g., birds) within the assessment area have been and/or are likely to be exposed to Site-related PCBs via their diet and through direct contact with contaminated surface water and sediment. The fish community is considered representative of aquatic biota because it is a key component of the ecosystem, providing both essential ecosystem functions and an important source of food for higher trophic organisms. Exceedances of effects thresholds or exceedances of consumption advisory trigger levels determined by an appropriate agency indicate that injury is likely (INDUSTRIAL 2012). Ingestion is expected to be the primary pathway for PCB injury to migratory birds at this site. Different species of migratory birds will have different pathways of exposure, depending on their feeding habits, through ingestion of contaminated soils, sediments, and/or prey items. Raptors such as sharp-shinned hawks and American kestrels have probably been exposed to PCBs through ingestion of small mammals such as field mice, or insects such as grasshoppers, inhabiting the site. Killdeer, mourning dove, American robin, yellow-shafted flicker, and other species, would be exposed through the food chain by consuming PCB-contaminated insects living in site soils, and through incidental ingestion of the contaminated soils while feeding. Mallards and other dabbling ducks, as well as killdeer, great blue herons and snowy egrets, would be at risk from ingestion of PCB-contaminated sediments adjacent to the site. Herons, egrets, double-crested cormorants, kingfishers, gulls, and terns would all be exposed to PCBs through contamination of fish prey species. Birds such as swallows that feed on the adult form of insects that spend their larval forms as aquatic benthic invertebrates would also be exposed (FWS 2007). Aquatic organisms may be exposed to PCBs through their diet, as well as through direct contact with PCBs in the water column. In turn, higher trophic organisms (e.g., birds) would also be expected to be exposed to site related contaminants. Although dissolved concentrations of PCBs in surface water tend to be low compared to concentrations in sediments, prolonged exposure to relatively low concentrations can lead to or add to the accumulation of PCBs in biota (INDUSTRIAL 2012). Benthic-dwelling organisms may be exposed to PCBs via their diet as well as through direct contact with PCBs in sediment. Among other functions, sediment communities are integral to maintaining the structure and function of the aquatic ecosystem (e.g., function as the base of the aquatic food web), and play an important role in ecosystem energy and nutrient cycling (INDUSTRIAL 2012).

3.1.4 Soil and Sediment pathways

Soils in the riparian area may have been exposed to Site-related PCBs that were released directly to Site soils during the electrical transformer salvage processes (INDUSTRIAL 2012). Soils in the riparian area and sediments of the mudflats also may have been exposed to Site-related PCBs through erosion and deposition of PCB-contaminated particles and/or through PCB-oil migration in groundwater. The sediments of the mudflats and the rip-rap area are also known to be contaminated with PAHs.

Sediments such as those found in the two mudflats areas are generally associated with zones of deposition where contaminants may accumulate to very high levels. Such areas can be either continuing or secondary sources of contamination to streams for several years even after the primary source is cleaned up. In addition, they serve as quiet areas that some organisms seek for refuge or feeding and reproduction, thus acting as areas where exposure is proportionately elevated above other areas associated with the site (USEPA 1994).

3.2 Exposed Areas

PCBs are ubiquitous at low concentrations in several site media due to poor historic handling procedures and the original UST release. As a result, PCBs are present on exterior building surfaces and site soils. What mobility PCBs demonstrate is probably the result of moving as a solute in petroleum. (Earth Tech 1994).

3.2.1 Exposed surface water estimates and concentrations

Sampling of the ponded water (at low tide) in the mud flats was conducted by BCM Engineers in July 1991. A total of four mud flat surface water samples were collected, two samples each from two locations. The purpose of this sampling was to attempt to identify and differentiate among PCBs seeping from the site, PCBs present in separate phase oil on water, and any PCBs dissolved in water. These four samples were submitted for the analysis of Pesticides/PCBs, TPH, group alkalinity, TSS, TDS, TOC and hardness. No detectable PCBs were identified in any of four surface water samples, or in one of two seep samples located on the southern (river) bank of the Site. At the second seep location (midway along the mudflat bank); PCBs were detected at 3.7 ppb (Earth Tech 1994).

3.2.2 Exposed sediment estimates and concentrations

Sediment in the Delaware River displayed a gradient showing higher PCB concentrations (up to 19.6 ppm) near the Site, and decreasing levels as distance from the site increased, symptomatic of a point source of PCBs from the site (Earth Tech 1994). Mudflat sediment contains PCBs primarily in a thin layer containing organic material in the near shore area. These surficial sediments may be redistributed by downstream flow, flood tides and storm events. The area-weighted average PCB concentrations for sediment within the mud flat and river areas are 0.78 and 0.95 ppm, respectively (DOJ 2004, Earth Tech 1995, Earth Tech 1994, NOAA 1994). The

area-weighted averages for the mud flat and river areas are then compared to the TEC and PEC thresholds (Table 2), which indicates that sediments in the assessment area have likely been contaminated and caused injury to trustee resources due to PCB exposure from 1991 through 2003. It is also likely both that contaminant concentrations were higher in the past, and were sufficient to exceed thresholds and cause injury, and that contaminant concentrations continued to cause injury after 2003 due to the slow rate of PCB natural attenuation (INDUSTRIAL 2012).

3.2.3 Exposed groundwater estimates and concentrations

Contaminants, especially TPH and PCBs are concentrated in an oily layer less dense than groundwater. A groundwater seep at the riverbank, which contained up to 3.7 parts per billion PCBs, was considered by NOAA (1994) as a possible risk to aquatic life in the Delaware River based on a dilution factor of 4,300 to 11,700 : 1 when groundwater mixes with river flow (Earth Tech 1994). Information reviewed to-date indicates that injury to groundwater has occurred due to the exceedances of the Safe Drinking Water Act (SDWA) maximum concentration level (MCL) for PCBs. The maximum PCB concentration in groundwater within the assessment area was 1,090 milligrams per liter (mg/L), which exceeds the corresponding MCL of 0.0005 mg/L. In addition, NAPL was identified atop groundwater and was the reason for the installation of groundwater monitoring and recovery wells (DOJ 2004, Earth Tech 1994, NOAA 1994 and citations therein).

3.2.4 Exposed soil estimates and concentrations

The literature indicates the onset of adverse effects at PCB concentrations of five ppm dry weight. Information regarding the onset of these toxicological endpoints attributable to PCB exposure in soil-dwelling invertebrates indicates that below five ppm it is possible that adverse effects occur, but are not expected to cause a loss in ecological services. When soil concentrations are between five and 50 ppm, earthworms experienced adverse effects on the immune system (e.g., suppression of S-rosette formations; Rodriguez-Grau et al. 1989). The area-weighted average PCB concentration for soils within the assessment area is approximately 7.69 ppm. Comparison of the area-weighted average soil PCB concentration to the five ppm thresholds indicates that soils in the assessment area have likely been injured due to PCB exposure (Table 3). It is also likely both that contaminant concentrations were higher in the past, and were sufficient to exceed thresholds and cause injury, and that contaminant concentrations continued to cause injury due to the slow rate of PCB natural attenuation (INDUSTRIAL 2012).

3.2.5 Exposed biota estimates and concentrations

Fish

A variety of toxicological endpoints exist for fish, including biochemistry, behavior, physiology, growth, reproduction, and survival. Information regarding the onset of these endpoints attributable to PCB exposure in various fish species indicates that below 0.28 ppm adverse effects do not regularly occur. For example, Adams et al. (1989, 1990, 1992) determined that

PCB levels of 0.3 ppm had no effect on the fecundity (clutch size) of redbreast sunfish, yet multiple studies have shown that salmonid species sustain biochemical and immunological effects from PCBs at levels as low as 0.28 (Bills and Marking 1977, Bills et al. 1981). Matta et al. (2001) found that at 1.3 ppm, there was an effect on the growth of F1 generation minnows. Furthermore, between concentrations of 1.5 and 5 ppm a 10 to 50 percent decrease in egg hatchability was documented (Mac and Schwartz 1992). Comparison of the geometric mean fish tissue PCB concentration to the thresholds indicates that fish tissue concentrations in the assessment area are above the toxicological threshold of 0.28 ppm (Table 4). Thus, fish in the assessment area have likely been injured due to Site-related PCB exposure. It is also likely both that contaminant concentrations were higher in the past, and were sufficient to exceed thresholds and cause injury, and that contaminant concentrations continued to cause injury after 2003 due to the slow rate of PCB natural attenuation (INDUSTRIAL 2012). Site related studies have included aquatic invertebrate and fish tissue samples from areas containing site contaminated sediments (Earth Tech 1994). Mean total PCB concentration from Asiatic clam (*Corbicula sp*) samples at the Metal Bank site was 0.742 parts per million wet weight. Fish from the nearshore area contained the following mean total PCB concentrations: Channel catfish (*Ictalurus punctatus*) whole body-2.13 ppm, filet-0.957 ppm and Eastern silvery minnow (*Hyboganathus regius*) whole body-1.90 ppm (FWS2007).

Benthic Invertebrates

PCB concentrations in tissue samples of Asiatic clams located in the 3-acre mudflat ranged from 0.2 to 1.0 mg/kg wet weight and 17.4 to 75.8 mg/kg lipid, indicating that PCBs are bioavailable and likely to accumulate in benthic food webs (USEPA 1994).

Migratory Birds

The Metal Bank site has released PCB-contaminated oil (concentrations as high as 800 ppm) into the Delaware River continuously since at least 1973. Sediment contamination up to 20 ppm has been found adjacent to the site. Sediment contamination plays a major role in food chain contamination; recent studies by DePinto and Coull (1997) determined that fish feeding in contaminated sediments accumulated five times more PCBs than fish feeding on contaminated prey in uncontaminated sediments.

Food chain contamination in the river by PCBs has been documented. Asiatic clams collected from the mudflat contained 0.2 to 1.0 ppm PCBs wet weight. Silvery minnows and channel cat fish collected adjacent to the site were found to contain 2.8 ppm and 4.0 ppm PCBs, respectively. Whole fish samples collected from Darby Creek (a tributary to the Delaware River downstream of the Site) in the 1980s contained up to 2.0 ppm PCBs. This poses a food-web risk to migratory birds that are attracted to high quality tidal habitats present at the John Heinz National Wildlife Refuge (JHNWR) and elsewhere along the river (FWS 2007).

Raptors

Positioned at the highest trophic level in the Delaware River ecosystem, the bald eagle is particularly susceptible to exposure of persistent contaminants that bio-magnify (such as PCBs) as they are transferred from lower trophic levels. The extensive sampling associated with the site remedial investigation, as well as the other sampling efforts identified above; reveal the presence of extensive PCB contamination emanating from the Metal Bank site. These sampling efforts indicate that the site is one of the largest sources of PCB contamination in this, the most heavily PCB-impacted section of Delaware River. This, coupled with the documentation of several historical contaminant releases from the site (Earth Tech 1994), comprise a large body of evidence implicating the Metal Bank site as a substantial contributor to the widespread PCB contamination in the Delaware Estuary. This contamination is present at high levels in the forage base of the Delaware River bald eagles (Haliaeetus leucocephalus) and has contributed significantly to the reproductive failure of the Delaware River eagle population (FWS 2007).

3.3 Potentially Affected Resources and Resource Services

A wide range of natural resources and natural resource services under Federal or State trusteeship are affected or potentially affected by the release of PCBs from the Metal Bank site. These natural resources provide a variety of ecological and human services. Federal guidelines and water quality criteria for PCBs in surface water, ground water, and sediment are presented in Tables 1. Potentially affected resources, and the services they provide, are described further below.

3.3.1 Surface water and sediment resources and services

The Delaware River, its riparian areas, mudflat area, and the services they provide, have been impacted from contamination from the Site. Sediment and surface water provide habitat for benthic invertebrates, which influence ecosystem functions (e.g., nutrient cycling) and are an important source of food for higher trophic organisms (*e.g.*, fish, turtles, and birds). These aquatic resources support both consumptive and non-consumptive recreational activities such as recreational fishing, environmental education, photography, hunting, hiking, bicycling, canoeing, and wildlife viewing.

3.3.2 Soil resources and services

Approximately 9.6 acres of riparian habitat associated with the Site have been potentially injured as a direct result of contamination and remedial actions including removals and capping. Types of services that have been devastated due to direct loss and residual contamination include, habitat for soil organisms, fertility and water holding capacity necessary to sustain vegetative cover, litter decomposition, and nutrient cycling.

3.3.3 Biotic resources and services

The Site serves as a critical stopover for migratory birds. Priority habitat identified within the site includes the mud flat area. Habitats for various species of migratory birds exist at and near

the site. While most of the Site is kept mowed, several areas near the site perimeter (e.g., adjacent to the mudflat and Delaware River) support mixed shrub, tree and grassy habitats suitable for many species of migratory birds and small mammals upon which migratory birds might feed. The 3.0 acre mudflat adjacent to the Site supports snails, amphipods, flatworms, freshwater mussels *(Corbicula* sp.), scuds *(Gammarus* sp.) and other benthic invertebrates that would serve as a food source for many different bird species. Adjacent to St. Vincent's School, a 2-acre wetland area dominated by arrow arum *(Peltalldra virgillica)* provides additional habitat. A variety of birds have been reported to use the site (see attached list) (FWS 2007).

In addition to migratory birds, anadromous fish are another trust resources expected to be affected by the Site. Numerous species of fish migrate close to the Site and reside in the area for extended periods during sensitive life stages. Eight species of anadromous fish use the river as a migratory corridor. Species of special interest due to their commercial importance or abundance in the area are the alewife, American eel (Anguilla rostrata), American shad, blueback herring, striped bass, and white perch. The river near the Site also supports population of the federally endangered shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (Acipenser oxyrinchus oxyrinchus). The Commonwealth of Pennsylvania currently has a consumption advisory on several fish species in the river due to concentrations of PCBs and chlordane above FDA Action Levels. The advisory covers an area from Burlington Island to Tinicum Island, and includes the portion of the river adjacent to the site. White perch (Morone americana), channel catfish, and American eel are among the species included in the advisory (FWS 2007).

In addition to ecological injuries related to the fish community discussed above, the existence of a PCB-related fish consumption advisory (FCA) on the Delaware River near the Site constitutes an injury under the DOI NRDA regulations (43 C.F.R. § 11.62 (f) (1)). Although this FCA has likely caused a loss in recreational fishing services to the public, at this time data are insufficient to quantify Site-related losses under the FCA (INDUSTRIAL 2012).

3.4 Groundwater resources and services

The groundwater at the Site serves as a potential source of contaminants (e.g., PCBs) to surface water and sediment through migration. However, this injury has not been addressed in this preassessment study.

3.5 Recreational Resources and Services

Recreational resources and services (e.g., fishing) associated with the Site have been adversely impacted by contaminants. However, this injury has not been addressed in this preassessment study.

3.6 Results of Long Term Monitoring (LTM)

3.6.1 2011 LTM

The total PCB congener results for sediment samples at the Site ranged from 0.087 to 0.448 mg/kg. These data indicate the PCB concentrations in the sediment were less than the cleanup criteria of 1.00 mg/kg. The fish tissue total PCB Aroclor data for this Site indicate the upstream reference range was from 0.11 to 0.28 mg/kg, the site range was from 0.57 to 1.47 mg/kg, and the downstream reference range was from 0.78 to 1.01mg/kg. The congener data ranges for these same three areas were 0.07 to 0.22 mg/kg, 0.09 to 0.49 mg/kg, and 0.11 to 0.22 mg/kg. Some of the PCB concentrations in fish tissue exceeded the literature based effects threshold of 0.28 mg/kg wet weight (Table 4) indicating injury. The summary data from 2011 LTM are in Tables 5 and 6. (Environ International Corporation. 2012).

3.6.2 2012 LTM

The total PCB congener results for sediment samples at the Site ranged from 0,073 to 4.43 mg/kg. These data indicate the PCB concentrations at some sediment locations exceed the cleanup criteria of 1.0 mg/kg. The fish tissue Aroclor PCB data at the upstream reference ranged from non-detect to 0.516 mg/kg, at the Site ranged from non-detect to 0.299 mg/kg, and at the downstream reference site ranged from 0.235 to 1.43 mg/kg. Some of the fish at the Site had concentrations of Aroclor PCBs exceeding the literature based effects threshold of 0.28 mg/kg indicating that injury is still occurring to these trust resources. However, the maximum site PCB concentrations were less than maximum PCB concentratins at both up- and down-stream reference locations. The concentration of Aroclor PCBs at the downstream reference site ranged from 0.235 to 1.43 mg/kg. The fish tissue congener data for the upstream reference, the Site, and downstream reference areas ranged from 0.1 to 0.77 mg/kg, 0.09 to 0.44 mg/kg, and 0.236 to 1.83 mg/kg, respectively. The eel tissue PCB congener data for these same three areas ranged from 0.256 to 0.376 mg/kg, 0.513 to 2.36 mg/kg, and 0.576 mg/kg, respectively. Some of the data at the Site exceed the literature based effects level of 0.28 mg/kg and both up- and down-stream reference concentrations, indicating injury to this trust species. The eel tissue Aroclor data for these same three areas ranged from 0.158 to 0.229 mg/kg, 0.383 to 1.47 mg/kg, and 0.455 mg/kg respectively. Both the Congener and Aroclor data for eel tissue indicates that eels at the Metal Bank Site are being injured from concentrations of PCBs (CDM Smith. 2013) and that PCB concentrations at the Site exceed concentrations at both reference locations. The 2012 long term monitoring data are summarized in Tables 7 and 8.

4.0 PRELIMINARY DETERMINATION REGARDING PREASSESSEMENT SCREEN CRITERIA

In accordance with section 11.23(e) of the Federal Natural Resource Damage Assessment Regulations (43 CFR Part 11.23(e)), the Trustees have determined that all of the following criteria have been met.

4.1 Criterion 1 - A release of a hazardous substance has occurred.

Information collected to date indicates that releases of waste oil, solvents, petroleum products, and metals from Metal Bank have resulted in contamination of soil, groundwater, and sediments at and adjacent to Metal Bank. A Final Remedial Investigation Report, dated October 1994, indicates that hazardous substance contamination has been detected at Metal Bank, including the 3-acre mudflat and adjacent Delaware River sediments. Dr. Jerome Diamond concluded in his expert report dated 2004 that the Metal Bank site is contaminated and toxic to aquatic life and that aquatic life uses are impaired there. Furthermore, the habitat is otherwise conducive to a variety of aquatic life and wildlife, including sensitive species found in mudflats elsewhere on this portion of the Delaware River. Species currently using the Metal Bank mudflat are at risk from PCBs, PAHs, and dioxins accumulated in near-field sediments and from likely food chain effects with these persistent, bio-accumulative chemicals. These chemicals are certainly available to fish and wildlife that feed on worms and other benthos found in the mudflat and river, thereby posing risks to these fauna. So long as the contaminated sediments and the source of the contamination are present, the environmental hazard and ecological impairment will persist.

4.2 Criterion 2 - Natural resources for which the Trustees may assert trusteeship under CERCLA have been or are likely to have been adversely affected by the release.

The exposed areas and the natural resources adversely affected by releases of PCBs are within the trusteeship of the Trustees as defined under CERCLA. Specific affected areas of trusteeship include: land, surface water, ground water, sediments, air resources, biotic resources, floodplain soils, and surface soils.

The Delaware River provides drinking water, supports industries (e.g., transportation of goods), and provides habitat for ecologically, recreationally, and commercially important biota (DRBC 2008). Additionally, the Metal Bank Site is located within Bird Conservation Region 30, and the Mid-Atlantic Coast Bird Conservation Region. On their northward flight, many migrating birds leave the coast and fly up the Delaware River valley. Similarly, many birds that have summered and nested in northern Canada fly down the Delaware River to the coast. As such, the habitat at the Metal Bank Superfund Site has served as a critical stopover for migratory birds.

The USEPA has concluded that PCBs and various other hazardous substances have been detected in the surface and subsurface soils onsite and in Delaware River sediment. There was also the presence of oil on the surface of the groundwater, in subsurface soils, and river and mudflat sediments. The PCB-contaminated oil had moved into the Delaware River as a result of groundwater and tidal wave movements underneath the Site. PCB-contaminated sediments had been detected along the shoreline immediately adjacent to the property line. Recreational fishermen may be at risk from eating contaminated fish. Future construction workers may be at risk from the PCBs in the oil beneath the Site. Fish and animals feeding on grounds next to the Site may also be affected.

In addition, the trustees believe that altered habitats and reductions in biotic species may have reduced recreational opportunities in and around the Site, including both consumptive and non-consumptive activities such as recreational fishing, environmental education, photography, hunting, hiking, bicycling, canoeing, and wildlife viewing.

4.3 Criterion 3 - The quantity and concentration of the released hazardous substance is sufficient to potentially cause injury to natural resources.

Pollutant sources such as the Site have released PCB-contaminated oil into the Delaware River which has had an adverse environmental impact on the river itself, and surrounding areas. It has been documented that quantities of PCBs, which are classified as hazardous substances, have been released (concentrations as high as 800 ppm) into the Delaware River continuously since at least 1973 from the Site. Sediment contamination up to 20 ppm has been found adjacent to the Site. The mean concentration of 2,250 ppb (2.25 ppm) total PCBs measured in mudflat sediments collected from the area closest (within 100 feet) to the Site has been documented in excess of EPA's clean-up action level of 1 ppm total PCBs as well as the threshold effects concentration (TEL) of 59.8 parts per billion (ppb) and probable effects concentration (PEC) of 676 ppb reported by MacDonald et al (2000) (see Table 2). PCB concentrations were highest at location near the southern tip of the property (3,999 ppb or 3.99 ppm at 6-12" depth), consistent with previous results for that area of the mudflat (DIAMOND 2004). According to sampling and investigations completed to date, the total quantity and concentrations of these releases is sufficient to cause injury to the soils, sediment, waters, and biota of the Metal Bank site. Direct injuries to specific resources have been documented in the above referenced literature. Indirect effects via elimination and alteration of life-dependant food, water, and habitat are also documented.

4.4 Criterion 4 - Data sufficient to pursue an assessment are readily available or are likely to be obtained at a reasonable cost.

Significant amounts of data relevant to natural resources and potential damages resulting from PCB-contaminated oil exposure on the Site, and the Delaware River are available from the published literature, government agencies (FWS, PAFBC, NOAA, and USEPA), the various responsible parties, and other sources. These data include information on contaminant releases, concentrations in the environment, and the effect of contamination on natural resources. Given the volume of available information, additional data useful for an assessment could be obtained at a reasonable cost.

4.5 Criterion 5 - Response actions carried out or planned do not or will not sufficiently remedy the injury to natural resources without further action.

In 1995, EPA proposed a plan to clean-up the Site by removing contaminated soils and collecting PCB-contaminated oil to prevent its release into the Delaware River. EPA issued its Record of

Decision (ROD) describing the clean-up in December 1997. In addition, EPA made changes to the ROD by issuing two Explanation of Significant Differences (ESDs) in September and December 2000. In 1998, EPA issued an enforcement order to 13 PRPs (ten utility companies and the site owners) to design and construct the cleanup. In September 2002 the utility group submitted a design report for the cleanup of the site. EPA approved the final design in January 2003, but the remedy in the design was not implemented due to litigation. A revised remedy was documented in a Consent Decree, which was entered by the Court on March 14, 2006. The major construction components of the work completed include: excavation of contaminated soils and placement of a soil cap at several inland PCB contaminated areas; decontamination of a large building on the Site; installation of a sheet pile wall along the southwest corner of the property adjacent to the Delaware River; removal of an underground storage tank and associated PCB contaminated soil; excavation of near-shore PCB contaminated sediments; and capping of the remaining PCB contaminated sediment areas in the Delaware River.

The revised remedial design was approved by EPA in February 2008.Construction took place between July 2008 and January 2010. During construction there were numerous technical issues with implementing the approved design. Upon completion of the construction inspections were conducted in January and February of 2010.

EPA signed and issue a Preliminary Closeout Report for the Site on March 23, 2010. However, response actions taken to date have not sufficiently restored the injured natural resources of the Site/Delaware River and interim losses of natural resources that occurred prior to the completion of the remedy remain unaddressed.

Aquatic and terrestrial ecological risk assessments were conducted in 1994 on the Site to evaluate potential hazard from contaminants detected in media (i.e., soils, surface water, sediment, etc.). The aquatic ecological risk assessment found that the primary route of exposure for benthic organisms in the near shore areas of the Delaware River and mudflat near the Site is through contact with sediments (and/or sediment interstitial water). Mean sediment concentrations of PCBs greatly exceeded probable effects levels (ER-M or high AET) in the riprap area, indicating that adverse effects to benthic invertebrates exposed to these contaminated sediments are highly likely. Tissue PCB concentrations in Asiatic clams in the mudflat, however, demonstrate that PCBs in the area are bioavailable and are likely to be accumulated in benthic food webs. Using the silvery minnow and channel catfish as representative of other fish species with similar exposure to the nearshore PCB-contaminated sediments immediately adjacent to the Site or to near shore food webs, the results suggest a potential risk of reproductive effects in sensitive fish species. The shortnose sturgeon may be particularly prone to accumulating and transferring high concentrations of PCBs to their developing offspring (considered the most sensitive toxic endpoint for PCBs to fish) due to their benthic feeding habit, longevity, late age of sexual maturity, and high lipid content of their eggs. Thus, the potential risk to shortnose sturgeon resulting from accumulation of PCBs from all exposure pathways near the Site may be greater than for other fish species. The terrestrial ecological risk assessment found that it was clear from the assessment that Rip-rap sediment, and mudflats near the Site show the greatest potential for immediate risk on the basis that, a wide distribution of contamination to

eco-receptors is possible. In the case of rip-rap sediment contamination, it is considered to be serious from the view point that stationary floras are subject to impacts and resident as well as opportunistic fauna easily contact the medium (NOAA, USEPA 1994).

Finally, the Trustees have no assurance that all impacted areas associated with the Site were fully evaluated or that the remedy fully addressed injuries to natural resources and related services. The final remedies do not fully restore the injuries that have occurred to the natural and aquatic resources in and around the Site. Based on the above, the Trustees contend that the remedial measures carried out do not fully address the various sources and pathways of exposure of natural resources to PCBs, or the injuries resulting from such exposure. Therefore, the Trustees have determined that the response actions carried out will not sufficiently remedy the injury to the natural resources of the Site without further action.

5.0 CONCLUSION

Following the review of information described in this Preassessment Screen, the Trustees have made a preliminary determination that the criteria specified in 43 CFR Part 11 (Natural Resource Damage Assessments) have been met. The Trustees have further determined that there is a reasonable probability of making a successful claim for damages with respect to natural resources over which the Trustees have trusteeship. Therefore, the Trustees have determined that an assessment of natural resource damages is warranted.

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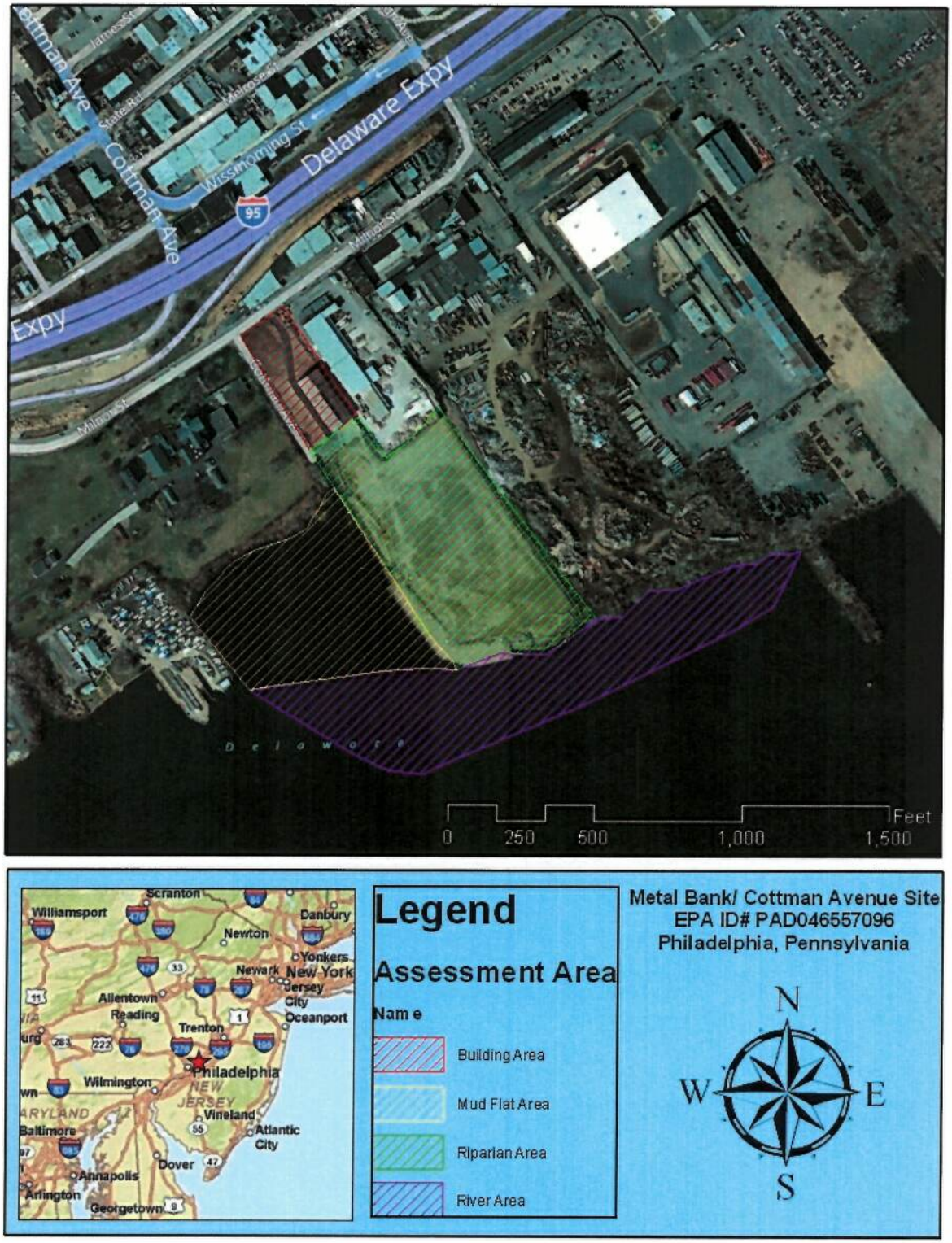

Figure 1. Metal Bank Site, Philadelphia, PA. Location Map

Figure 2. Photograph of the mudflat area at the bank of the Delaware River.

Figure 3. Photograph of the riparian area at the Metal Bank Site.

Figure 4. Site Images of the Metal Bank
Upper Left – 03/24/1995
Upper Right – 12/31/2001
Lower Left – 08/24/2005
Lower Right – 04/11/2010

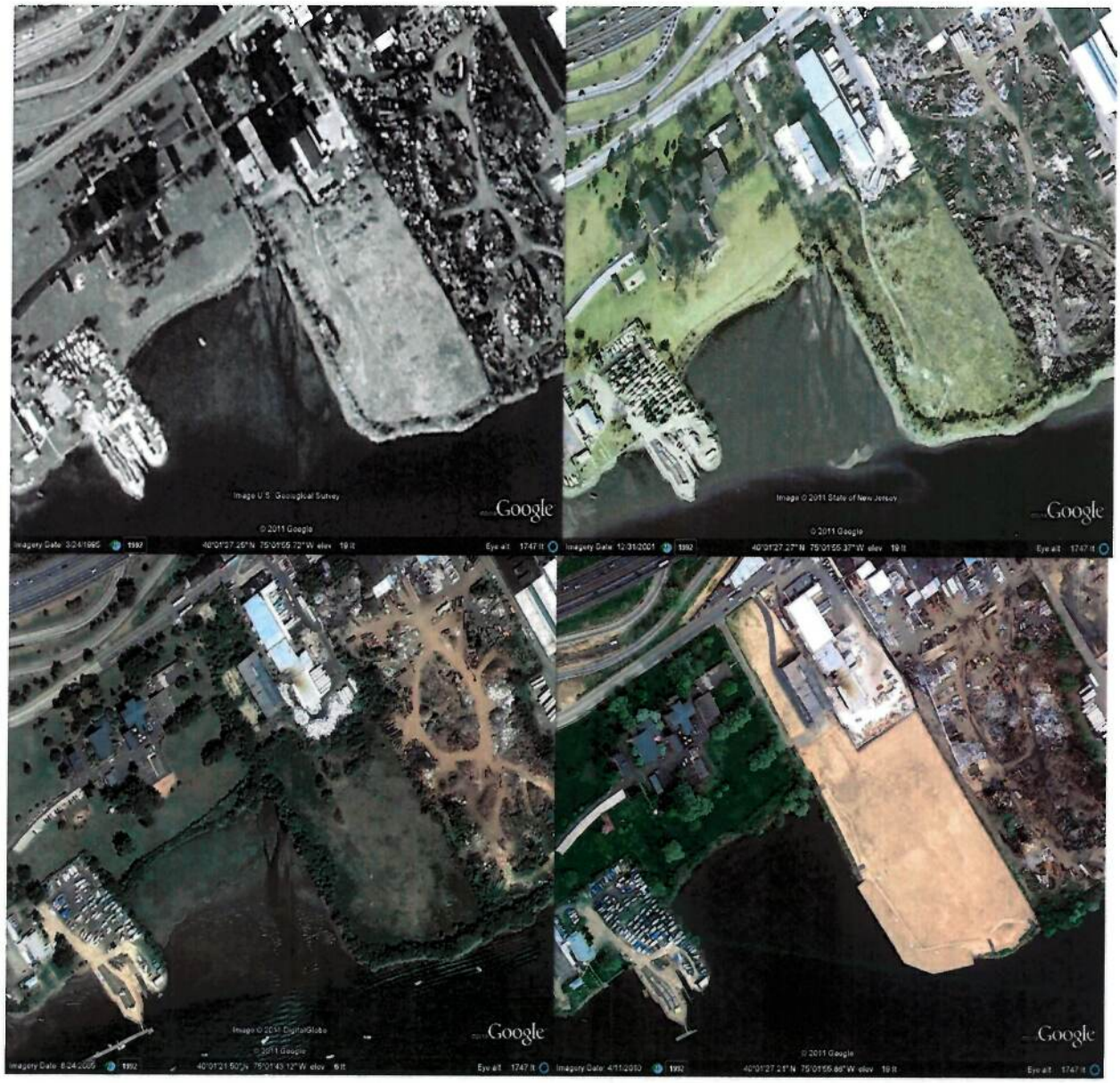

Table 1, Summary of USEPA's National Water Quality and Sediment Criteria for PCBs

Surface Water (ppb)	Region III Screening Benchmarks	Water + Organism	Organism Only	Chronic (CCC)	Drinking Water (MCL)
PCBs	0.000074	0.000064	0.000064	0.014	0.5
Sediment (ppm)	**Region III Screening Benchmarks**				
PCBs	0.0598				

(CMC) criteria maximum concentration

(CCC) criterion continuous concentration

(MCL) maximum contaminant level

Table 2: Area-weighted average PCB sediment concentrations and applicable sediment quality guidelines

CONTAMINANT[1]	NUMBER OF SAMPLES	ASSESSMENT AREA	AREA-WEIGHTED AVERAGE (ppm)	TEC[2]	PEC[2]
Total PCBs	**109**	**Mud Flat**	**0.78**	**0.0598**	**0.676**
	105	**River**	**0.95**		
Notes: **1. Sources of contaminant data: DOJ 2004, Earth Tech 1995, Earth Tech 1994, and NOAA 1994. 2. "TEC" is the Threshold Effects Concentration. "PEC" is the Probable Effects Concentration (MacDonald et al. 2000).**					

Table 3: PCB concentrations in Riparian area soils

CONTAMINANT	NUMBER OF SAMPLES	AREA-WEIGHTED AVERAGE (PPM)	LITERATURE-BASED EFFECTS THRESHOLD (PPM)
Total PCBs	110	7.69	5
Sources of contaminant data: DOJ 2004, Earth Tech 1994 Source of threshold: Rodriguez-Grau et al. 1989.			

Table 4: PCB concentrations in fish

CONTAMINANT	NUMBER OF SAMPLES	GEOMETRIC MEAN (PPM WW)	LITERATURE BASED EFFECTS THRESHOLD (PPM WW)
Total PCBs	**87**	**2.66**	**0.28**
Sources of contaminant data: Earth Tech 1994 and NOAA 1994.			

Table 5. 2011 LTM Sediment data (dry weight) from the Site

Location	Total PCB Congeners (mg/kg)
1	0.402
2	0.448
3	0.211
4	0.217
5	0.079
6	0.087

Source: Environ International Corporation. 2012. 2011 Long-Term Monitoring Annual Report, Metal Bank Cottman Avenue Superfund Site, Philadelphia, Pennsylvania. February.

Table 6. 2011 LTM Fish Tissue Data (wet weight) from the Site

Location	Aroclor (PRP) mg/kg	Aroclor (EPA) mg/kg	Congener (EPA) mg/kg
Upstream reference	0.14 – 0.129	0.11 – 0.28	0.07 – 0.22
Metal Bank 1	0.082 – 0.136	0.57 – 1.27	0.09 – 0.24
Metal Bank 2	0.05	1.47	0.1 – 0.22
Metal Bank 3	0.05	-	0.22 – 0.49
Downstream reference	0.058 – 0.132	0.78 – 1.01	0.11 – 0.22

Source: Environ International Corporation. 2012. 2011 Long-Term Monitoring Annual Report, Metal Bank Cottman Avenue Superfund Site, Philadelphia, Pennsylvania. February.

Table 7. 2012 LTM Sediment data (dry weight) from the Site

Location	Total PCB Congener (mg/kg)
1	0.912
2	4.430
3	1.120
4	1.070
5	0.073
6	0.225
7	1.070

Source: Environ International Corporation. 2012. 2011 Long-Term Monitoring Annual Report, Metal Bank Cottman Avenue Superfund Site, Philadelphia, Pennsylvania. February.

Table 8. 2012 LTM Fish and Eel Tissue total PCB concentrations (wet weight) from the Site.

Location	Fish Aroclor (mg/kg)	Fish Congener (mg/kg)	Eel Aroclor (mg/kg)	Eel Congener (mg/kg)
Upstream reference	Non detect – 0.516	0.10 – 0.77	0.256 – 0.376	0.158 – 0.229
Metal Bank 1	Non detect – 0,.299	0.09 – 0.44	0.782	0.389
Metal Bank 2	0.133 – 0.19	0.178 – 0.290	0.513	0.383
Metal Bank 3			0.987 – 2.36	0.622 – 1.47
Downstream reference	0.235 – 1.43	0.236 – 1.83	0.576	0.455

Source: CDM Smith. 2013. Data Summary Tables Metal Bank Superfund Site, Philadelphia, Pennsylvania. (Letter). January 16.

Commonwealth of Pennsylvania
Acting by and Through

Pennsylvania Fish and Boat Commission:

By: _____ Date 19 Nov 2014

Executive Director

Commonwealth of Pennsylvania
Acting by and Through

Pennsylvania Department of Environmental Protection:

By: _____ Date 10-21-14

Cosmo Servidio
Regional Director
Southeast Region

Commonwealth of Pennsylvania
Acting by and Through

Pennsylvania Department of Conservation and Natural Resources:

By: _____ Date 11 · 29 · 17

Secretary

PREASSESSMENT SCREEN
FOR THE
Metal Bank Superfund Site NRDA
July 2013
PREPARED BY THE
Metal Bank Trustee Council
REGARDING NATURAL RESOURCE DAMAGE ASSESSMENT & RESTORATION

The United States Department of the Interior:

By: 

Date: 10/29/13

Wendi Weber
Regional Director, U.S. Fish and Wildlife Service

The United States Department of Commerce

By: _____ Date 14 October 2014

David Westerholm
Director
Office of Response and Restoration
National Oceanic and Atmospheric Administration